

## **ANNEX H** **HEAT WAVE RESPONSE**

### **Threat assessment:**

During the months of late spring, summer and early fall, the City of San Jose may experience temperatures that rise above 95 degrees for the daily high. Humidity rarely rises above 60%, which means that people seldom experience moist skin during these hot spells and may not recognize the danger posed to human health by heat distress.

### **Response plan:**

1. The Monterey Office of the National Weather Service (NWS) notifies the City's Fire Dispatch Center in the event of a heat emergency. Fire Dispatch notifies the City's Office of Emergency Services, which confirms the emergency and obtains details of the heat trend from the National Weather Service. San José Police Communications is the alternate point of contact if the NWS cannot reach Fire Dispatch.
2. In a brief summary of the heat emergency, the City's Office of Emergency Services makes a recommendation to open city cooling centers and to post heat emergency information to the City's website.
  - a) The summary and recommendation are communicated to the following city departments: Parks, Recreation and Neighborhood Services; General Services; Police Communications; Police Bureau of Field Operations; Fire Communications; Housing; City Manager's Office/ Public Information; city call center and respective department directors. The heat emergency information is also sent to the Radio Amateur Civil Emergency Service.
  - b) Once the City's Parks, Recreation and Neighborhood Services Department confirms the opening of available city cooling centers, the public is notified via website posting and local media outlets. The information is also dispersed to the County Office of Emergency Services, the Coastal Region of the California Emergency Management Agency, PG&E and volunteer organizations.
  - c) See the next page for more detailed procedures for opening cooling / warming centers. Note that this same process also applies to opening warming centers during extreme cold weather.
3. The City's Office of Emergency Services provides public education materials on heat stress dangers. Fliers are distributed during warm weather months at senior centers, libraries and at public events, and are available to download from the City's website. Brochures like "Heat Wave: A Major Summer Killer" are available at [http://www.nws.noaa.gov/om/brochures/heat\\_wave.shtml](http://www.nws.noaa.gov/om/brochures/heat_wave.shtml); a copy is attached to this annex for reference.
4. During hot spells, the City's Office of Emergency Services works with the local media to publicize the availability of information on self-care during heat waves, and the opening of the community cooling centers.

**SAN JOSÉ OES**  
**PROCEDURE FOR OPENING COOLING/ WARMING CENTERS**

1. The Monterey Office of the National Weather Service (NWS) should call Fire Dispatch if there is a heat emergency. In turn, Fire Dispatch should contact San José OES. OES may receive email notification as well, which should be printed out and walked down to the PD Communications Bridge.
2. Confirm your understanding of the situation when you call the Monterey Office. Dave Reynolds is the chief meteorologist but he often travels so simply talk with whoever Dave has left in charge.

Dave Reynolds  
Meteorologist In Charge, National Weather Service  
Business: (831) 656-1710 EXT 222  
Fax: (831) 656-1747  
Mobile:(831) 594-3334  
david.reynolds@noaa.gov  
San Francisco/Monterey Bay Area Weather Forecast Office  
21 Grace Hopper Ave, Stop 5  
Monterey, CA 93943-5505

3. Send a short email (3 bullets or so) summarizing the situation (start date to open centers, stop date, anticipated temperature(s)) along with a **recommendation** to open cooling/ warming centers. Send this email to:

- a. PRNS (Dan Wax)
- b. General Services (Ken Tanase, Patrick Brooks)
- c. Police Communications (Cameron Smith)
- d. Police BFO (Don Anders, at his request)
- e. Fire Communications (#Fire Dispatch Fire Supervisor, Jerry Buzzetta)
- f. Housing (Jessica Scheiner)
- g. Public Information (Tom Manheim, Astra Freedman)
- h. RACES (Chris Swartout, David Paul)
- i. OES (Alvin Galang, Saman Saffarzadeh)

Copy to:

- j. Chris Shippey, Eileen Soto, Sandy Cranford, Deb Figone
- k. Department heads and their Assistants: Albert Balagso, Julie Edmonds-Mares, Peter Jensen, Randy Turner, Rob Davis, Dan Katz, Chris Moore, Darryl von Raesfeld, Teresa Reed, Leslye Krutko, Jacky Morales-Ferrand
- l. OES "Safety nets:" Kimberly Hernandez, Cay Denise MacKenzie

4. Once PRNS confirms which cooling/ warming centers are available for opening, send email to the below distribution notifying of the openings, attaching a list of the cooling/ warming centers and also ask that the information be posted to the city's internet and intranet sites.

- a. PRNS (Dan Wax, Lisje Archdeacon)
- b. General Services (Ken Tanase, Patrick Brooks, Matt Morley)
- c. Housing (Jessica Scheiner)
- d. Public Information (Cathy Kenney, Patricia Nicandro, Astra Freedman)
- e. Police Communications (# Police Communications Supervising Staff, Cameron Smith)
- f. Fire Communications (#Fire Dispatch Fire Supervisor, Jerry Buzzetta)
- g. RACES (Chris Swartout, David Paul)
- h. Police Bureau of Field Operations ( Andy Galea)
- i. Citywide call center (Desiree Jafferies)

Copy to:

- j. PRNS (Albert Balagso, Julie Edmunds-Mares, Jay Castellano)
- k. General Services (Peter Jensen, Randy Turner)
- l. Housing (Leslye Krutko, Jacky Morales-Ferrand)
- m. PIO (Tom Manheim)
- n. Police (Diane Urban, Chris Moore, Dan Katz, Robert Davis)
- o. Fire (Geoff Cady, Teresa Reed, Darryl Von Raesfeld)
- p. CMO (Deb Figone, Sandy Cranford, Chris Shippey, Eileen Soto)
- q. I.T.D. (Steve Ferguson)
- r. City OES (Scarlett Lam, Cay Denise Mackenzie, Kimberly Hernandez, Saman Saffarzadeh, Alvin Galang)
- s. County OES (Kirstin Hofmann, Irma Puentes)
- t. County EMS (Josh Davies, Marty Fenstersheib)
- u. SJ Search and Rescue (Phil Emery)
- v. NWS (Dave Reynolds, Tom Evans)
- w. Cal EMA Coastal Region (Doug Wisman, Cecile Rollinson)
- x. PG&E (Papia Gabelin)
- y. United Way 211 (Kim Ferm)

5. Send email to Papia Gabelin at PG&E ([PBG4@pge.com](mailto:PBG4@pge.com)) asking her to post San Jose cooling centers to PG&E site; also ask if PG&E has plans for responding to power outages, should they occur.

6. Participate in daily conference calls with Cal EMA and/or County OES, if they are held.

7. If Housing sends lists of homeless shelters which will act as cooling centers, forward this information to PIO (Tom Manheim), webmasters (Astra Freedman, Alvin Galang, Cathy Kenny), County and State OES, as well as Police and Fire Communications, with cc: to City Manager's Office (Chris Shippey, Eileen Soto, Rita McGrath, Deb Figone).

**City of San José**  
**2009 Cooling and Warming Centers**

<u>Location</u>	<u>Address</u>	<u>Phone #</u>	Council District
West San Jose Comm. Ctr.	3707 Williams Road San Jose, CA 95117	408-249-6580	1
Southside Comm. Ctr.	5585 Cottle Rd. San Jose, CA 95123	408-629-3336	2
Roosevelt Comm Ctr.	901 East Santa Clara St. San Jose, CA 95116	408-794-7555	3
Berryessa Comm. Ctr.	3050 Berryessa Rd. San Jose, CA 95132	408-251-6392	4
Mayfair Comm Ctr.	2039 Kammerer Ave. San Jose, CA. 95116	408-794-1060	5
Willows Senior Ctr.	2175 Lincoln Ave. San Jose, CA 95125	408-448-6400	6
George Shirakawa Comm. Ctr.	2072 Lucretia Ave. San Jose, CA 95122	408-277-3317	7
Evergreen Comm. Ctr.	4860 San Felipe Rd. San Jose, CA 95135	408-270-2220	8
Camden Comm. Ctr.	3369 Union Ave. San Jose, CA 95124	408-559-8553	9
Almaden Comm. Ctr.	6445 Camden Ave. San Jose, CA 95120	408-268-1133	10

Information: San Jose Parks, Recreation, and Neighborhood Services  
 Phone: 408-277-2741



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# Heat Wave: A Major Summer Killer

## A National Problem

Heat kills by taxing the human body beyond its abilities. In a normal year, about 175 Americans succumb to the demands of summer heat. Among the large continental family of natural hazards, only the cold of winter-not lightning, hurricanes, tornadoes, floods, or earthquakes-takes a greater toll. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In the disastrous heat wave of 1980, more than 1,250 people died.

And these are the direct casualties. No one can know how many more deaths are advanced by heat wave weather-how many diseased or aging hearts surrender that under better conditions would have continued functioning.

North American summers are hot; most summers see heat waves in one section or another of the United States. East of the Rockies, they tend to combine both high temperature and high humidity although some of the worst have been catastrophically dry.

## NOAA's National Weather Service Heat Index Program

Considering this tragic death toll, the National Weather Service (NWS) has stepped up its efforts to alert more effectively the general public and appropriate authorities to the hazards of heat waves-those prolonged excessive heat/humidity episodes.

Based on the latest research findings, the NWS has devised the "Heat Index" (HI), (sometimes referred to as the "apparent temperature"). The HI, given in degrees F, is an accurate measure of how hot it really feels when relative humidity (RH) is added to the actual air temperature.

To find the HI, look at the Heat Index Chart. As an example, if the air temperature is 95°F (found on the left side of the table) and the RH is 55% (found at the top of the table), the HI-or how hot it really feels-is 110°F. This is at the intersection of the 95° row and the 55% column.

**IMPORTANT:** Since HI values were devised for shady, light wind conditions, EXPOSURE TO FULL SUNSHINE CAN INCREASE HI VALUES BY UP TO 15°F. Also, STRONG WINDS, PARTICULARLY WITH VERY HOT, DRY AIR, CAN BE EXTREMELY HAZARDOUS.

**Heat Index/Heat Disorders:** Possible heat disorders for people in higher risk groups.

Heat Index of 130° OR Higher: HEATSTROKE/SUNSTROKE HIGHLY HIGHER LIKELY WITH CONTINUED EXPOSURE,

Heat Index of 105° - 130°: SUNSTROKE, HEAT CRAMPS OR HEAT EXHAUSTION LIKELY, AND HEATSTROKE POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY.

Heat Index of 90°- 105°: SUNSTROKE, HEAT CRAMPS AND HEAT EXHAUSTION POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY.

## Heat Index of 80° - 90°: FATIGUE POSSIBLE WITH PROLONGED EXPOSURE AND/OR PHYSICAL ACTIVITY

Note on the HI chart the shaded zone above 105°F. This corresponds to a level of HI that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

The "Heat Index vs. Heat Disorder" table (next to the HI chart) relates ranges of HI with specific disorders, particularly for people in higher risk groups.

### **Summary of NWS's Alert Procedures**

The NWS will initiate alert procedures when the HI is expected to exceed 105°- 110°F (depending on local climate) for at least two consecutive days. The procedures are:

- Include HI values in zone and city forecasts.
- Issue Special Weather Statements and/or Public Information Statements presenting a detailed discussion of
  - Extent of the hazard including HI values
  - Who is most at risk
  - Safety rules for reducing the risk.
- Assist state/local health officials in preparing Civil Emergency Messages in severe heat waves. Meteorological information from Special Weather Statements will be included as well as more detailed medical information, advice, and names and telephone numbers of health officials.
- Release to the media and over NOAA's own Weather Radio all of the above information.

### **How Heat Affects the Body Human**

Human bodies dissipate heat by varying the rate and depth of blood circulation, by losing water through the skin and sweat glands, and-as the last extremity is reached-by panting, when blood is heated above 98.6 degrees. The heart begins to pump more blood, blood vessels dilate to accommodate the increased flow, and the bundles of tiny capillaries threading through the upper layers of skin are put into operation. The body's blood is circulated closer to the skin's surface, and excess heat drains off into the cooler atmosphere. At the same time, water diffuses through the skin as perspiration. The skin handles about 90 percent of the body's heat dissipating function.

Sweating, by itself, does nothing to cool the body, unless the water is removed by evaporation, and high relative humidity retards evaporation. The evaporation process itself works this way: the heat energy required to evaporate the sweat is extracted from the body, thereby cooling it. Under conditions of high temperature (above 90 degrees) and high relative humidity, the body is doing everything it can to maintain 98.6 degrees inside. The heart is pumping a torrent of blood through dilated circulatory vessels; the sweat glands are pouring liquid-including essential dissolved chemicals, like sodium and chloride onto the surface of the skin.

### **Too Much Heat**

Heat disorders generally have to do with a reduction or collapse of the body's ability to shed heat by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When heat gain exceeds the level the body can remove, or when the body cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise and heat-related illness may develop.

Ranging in severity, heat disorders share one common feature: the individual has overexposed or over exercised for his age and physical condition in the existing thermal environment.

Sunburn, with its ultraviolet radiation burns, can significantly retard the skin's ability to shed excess heat. Studies indicate that, other things being equal, the severity of heat disorders tend to increase with age-heat cramps in a 17-year-old may be heat exhaustion in someone 40, and heat stroke in a person over 60.

Acclimatization has to do with adjusting sweat-salt concentrations, among other things. The idea is to lose enough water to regulate body temperature, with the least possible chemical disturbance.

## Cities Pose Special Hazards

The stagnant atmospheric conditions of the heat wave trap pollutants in urban areas and add the stresses of severe pollution to the already dangerous stresses of hot weather, creating a health problem of undiscovered dimensions. A map of heat-related deaths in St. Louis during 1966, for example, shows a heavier concentration in the crowded alleys and towers of the inner city, where air quality would also be poor during a heat wave.

The high inner-city death rates also can be read as poor access to air-conditioned rooms. While air conditioning may be a luxury in normal times, it can be a lifesaver during heat wave conditions.

The cost of cool air moves steadily higher, adding what appears to be a cruel economic side to heat wave fatalities. Indications from the 1978 Texas heat wave suggest that some elderly people on fixed incomes, many of them in buildings that could not be ventilated without air conditioning, found the cost too high, turned off their units, and ultimately succumbed to the stresses of heat.

### Preventing Heat-Related Illness

Elderly persons, small children, chronic invalids, those on certain medications or drugs (especially tranquilizers and anticholinergics), and persons with weight and alcohol problems are particularly susceptible to heat reactions, especially during heat waves in areas where a moderate climate usually prevails.

### Heat Wave Safety Tips

**Slow down.** Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day. Individuals at risk should stay in the coolest available place, not necessarily indoors.

**Dress for summer.** Lightweight light-colored clothing reflects heat and sunlight, and helps your body maintain normal temperatures.

**Put less fuel on your inner fires.** Foods (like proteins) that increase metabolic heat production also increase water loss.

Drink plenty of **water or other non-alcohol fluids**. Your body needs water to keep cool. Drink plenty of fluids even if you don't feel thirsty. Persons who (1) have epilepsy or heart, kidney, or liver disease, (2) are on fluid restrictive diets or (3) have a problem with fluid retention should consult a physician before increasing their consumption of fluids.

### **Do not drink alcoholic beverages.**

**Do not** take salt tablets unless specified by a physician.

**Spend more time in air-conditioned places.** Air conditioning in homes and other buildings markedly reduces danger from the heat. If you cannot afford an air conditioner, spending some time each day (during hot weather) in an air conditioned environment affords some protection.

**Don't get too much sun.** Sunburn makes the job of heat dissipation that much more difficult

## Know These Heat Disorder Symptoms

**SUNBURN:** Redness and pain. In severe cases swelling of skin, blisters, fever, headaches. First Aid: Ointments for mild cases if blisters appear and do not break. If breaking occurs, apply dry sterile dressing. Serious, extensive cases should be seen by physician.

**HEAT CRAMPS:** Painful spasms usually in muscles of legs and abdomen possible. Heavy sweating. First Aid: Firm pressure on cramping muscles, or gentle massage to relieve spasm. Give sips of water. If nausea occurs, discontinue use.

**HEAT EXHAUSTION:** Heavy sweating, weakness, skin cold, pale and clammy. Pulse thready. Normal temperature possible. Fainting and vomiting. First Aid: Get victim out of sun. Lay down and loosen clothing. Apply cool, wet cloths. Fan or move victim to air conditioned room. Sips of water. If nausea occurs, discontinue use. If vomiting continues, seek immediate medical attention.

**HEAT STROKE (or sunstroke):** High body temperature (106° F. or higher). Hot dry skin. Rapid and strong pulse. Possible unconsciousness. First Aid: HEAT STROKE IS A SEVERE MEDICAL EMERGENCY. SUMMON EMERGENCY MEDICAL ASSISTANCE OR GET THE VICTIM TO A HOSPITAL IMMEDIATELY. DELAY CAN BE FATAL. Move the victim to a cooler environment Reduce body temperature with cold bath or sponging. Use extreme caution. Remove clothing, use fans and air conditioners. If temperature rises again, repeat process. Do not give fluids. Persons on salt restrictive diets should consult a physician before increasing their salt intake.

\*For more information contact your local American Red Cross Chapter. Ask to enroll in a first aid course.

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